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LSI CORPORATION			CHU, GABRIEL L	
1621 BARBER LANE				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

ED

Office Action Summary	Application No. 10/817,344	Applicant(s) EL-BATAL, MOHAMAD	
	Examiner Gabriel L. Chu	Art Unit 2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-7, 9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

3. Referring to claim 1 and subsequently claims 2-7, 9, Applicant has claimed "a power supply for providing electrical energy to the components thereof". It is not clear what "the components thereof" is referring to. From Applicant's arguments it is evident that Applicant is attempting to refer to "the components" that comprise at least the non-volatile memory of the disk array module.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 4, 6, 7, 10, 13, 15, 16, rejected under 35 U.S.C. 103(a) as being unpatentable over US 5305013 to Daniels in view of US6654816 to Zaudtke et al. (herein Z) and "Auxiliary charging device for portable telephone set" by Taguchi et al.**

6. Referring to claim 1, 10, Daniels discloses an apparatus for locating a failed disk drive in a plurality of disk drives on a removable disk array module having a backplane connector, comprising in combination: a host controller disposed on said disk array module for identifying a failed disk drive and for determining the location thereof on said disk array module (From line 6 of column 3, "The processor 86 receives information regarding the status of each of the disk drives 51 through 58 from the disk drive interface 82. The processor 86 writes information through a driver 88 to the LED's 41 through 48 to set the output of each of the LED's 41 through 48 depending on the status of their corresponding disk drives 51 through 58.").

Although Daniels does not disclose a non-volatile memory device disposed on said disk array module for receiving the location of the failed disk drive from said host controller, and for recording same; and a portable disk locator adapted for communicating with said non-volatile memory device, and for causing the location of the failed disk drive to be displayed, storing failure information for display on portable diagnostics is known in the art. An example of this is shown by Zaudtke, from line 51 of column 3, "In yet further embodiments, a memory, such as implemented using non-volatile (NV) memory devices or the like, may be coupled to the microcontroller for storing the status information of the computer. The microcontroller may then store status information from the computer into its NV memory, or may further store information from the handheld device sent via the infrared transceiver. In yet another embodiment, the computer infrared transceiver, the microcontroller and the NV memory receive auxiliary power so that these devices are operational when the computer is

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powered down. In this manner, the microcontroller sends information from the NV memory to the handheld device even when the computer is powered down.”). A person of ordinary skill in the art at the time of the invention would have been motivated to use a handheld device and non-volatile memory because, as disclosed by Zaudtke, “so that these devices are operational when the computer is powered down”, and from the abstract, “The handheld device effectively replaces external LCD health status hardware that typically consumes valuable space on the front bezel of the computer. The handheld device may further replace traditional input/output (I/O) devices, such as a keyboard, a mouse, a monitor, a disk drive, etc. For example, the handheld device may be utilized to monitor and control boot up operations of the computer, such as displaying boot up information or otherwise executing setup or diagnostic routines.” Further, Daniels discloses just such a situation described by Zaudtke, from the abstract, “A graphical display icon on the front of a data storage unit provides status information on disk drives within the unit. The icon has a shape identical to that of the unit and includes a number of bicolor LED's which each correspond to a similarly situated disk drive located in the unit. The color emitted by the LED's communicate information on the status of the corresponding disk drive within the unit.”

Further, while Daniels does not specifically disclose that the disk array module can be taken out of service, Z also discloses that a diagnosis target may be powered down, from line 30 of column 10 (with emphasis) “The health software 305 may further report an operating problem or error of a device or component, such as the CPU(s) 202, in which case the administrator 126 may desire to **shut the server computer 200**

down to replace the malfunctioning device(s). Of course, the health software 305 may perform some of these functions **automatically**. The management software 303 may be used in a similar manner, such as, for example, to control the operating status of one or more ports of the HUB 115. The information access application 307 interfaces with the management software 303 and the health software 305 to enable communications with an external device **via the serial port 121**, such as with the handheld device 123. In this manner, the administrator 126 has access to any of the management and status information provided by the management software 303 and the health software 305 via the handheld device 123 **coupled through the serial port 121.**" A person of ordinary skill in the art at the time of the invention could have been further motivated to have the system shut down because, as disclosed by Z above, there is a need to replace a malfunctioning device.

Further, Z while discloses that the portable disk locator has a power supply (it is an electrical device that must be supplied with power) and that the locator may communicate serially, neither Daniels nor Z specifically disclose that the portable disk locator's power supply provides electrical energy to the non-volatile memory on the disk array module. However, having a portable device provide energy to another device through a serial port is known in the art. An example of this is shown by Taguchi from the abstract (with emphasis), "An auxiliary charging connector for portable telephone set 3 is constituted of an **USB** connector plug 3a connected to the USB terminal-side of a portable personal computer a cable 3b and a portable telephone-side connector plug 3c connected to the connector-socket of the portable telephone set. Power lines (Vcc and

GND) for outputting DC5.0 V and data lines (D+ and D-) are connected to the USB connector plug 3a. The power line in the lines is connected to the portable telephone-side connector plug 3c and DC5.0 V is supplied. The portable personal computer supplies the power voltage of DC5.0 V to the portable telephone set 4 through an incorporated USB interface and the power line." A person of ordinary skill in the art at the time of the invention could have been motivated to use such a portable charging device because, as disclosed by Taguchi in the abstract, "an AC adapter and a private charger are not required." Furthermore, Z has specifically disclosed a need to communicate serially, which universal serial bus provides. Further, Z has specifically disclosed a need for auxiliary power, but has not disclosed a specific source of the power, but rather that is supplied via the VAUX bus of the server (see figure 8), therefore, supplying power via USB fulfills the need of Z in a simple and elegant fashion.

7. Referring to claim 4, 7, 13, 16, Daniels in view of Z discloses said portable disk locator device comprises a power supply for providing electrical energy to the components thereof (From line the abstract of Z, "Auxiliary power may enable handheld communications when the computer is shut down."),

a processor for reading said non-volatile memory device and indicator devices disposed in a configuration similar to that of said disk drives on said disk array module, such that the location of a failed disk drive is displayed by activation of said indicator device corresponding to that disk drive (Daniels, from line 6 of column 3, "The processor 86 receives information regarding the status of each of the disk drives 51 through 58 from the disk drive interface 82. The processor 86 writes information through a driver 88

to the LED's 41 through 48 to set the output of each of the LED's 41 through 48 depending on the status of their corresponding disk drives 51 through 58." Zaudtke, from line 51 of column 3, "In yet further embodiments, a memory, such as implemented using non-volatile (NV) memory devices or the like, may be coupled to the microcontroller for storing the status information of the computer. The microcontroller may then store status information from the computer into its NV memory, or may further store information from the handheld device sent via the infrared transceiver. In yet another embodiment, the computer infrared transceiver, the microcontroller and the NV memory receive auxiliary power so that these devices are operational when the computer is powered down. In this manner, the microcontroller sends information from the NV memory to the handheld device even when the computer is powered down."

Abstract, Z, "The handheld device effectively replaces external LCD health status hardware that typically consumes valuable space on the front bezel of the computer.").

8. Referring to claim 6, 15, Daniels in view of Z discloses said disk array module comprises a plurality of indicator devices adapted to be activated by said portable disk locator, at least one indicator device of said plurality of indicator devices being disposed in the vicinity of each of said disk drives (See, for example, figure 1 of Z wherein the handheld device is "in the vicinity").

9. Claim 2, 11 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5305013 to Daniels in view of US6654816 to Zaudtke et al. and Taguchi as applied to claim 1, 10 above, and further in view of US 5367647 to Coulson et al.

10. Referring to claim 2, 11, although Daniels in view of Z in view does not specifically disclose said portable disk locator comprises means for resetting said non-volatile memory device when the failed disk has been repaired or replaced, this is known in the art. An example of this is shown by Coulson, from line 62 of column 9, "An on-line replacement scheme for peripheral devices 30 requires apparatus for software control of power for selected ones of the devices. In a typical scenario, computer 28 detects a fault in the data received from peripheral device 30B. Computer 28 responds by sending to monitor board 70 commands that illuminate the indicator 74B "fail" LED and turn off the power to peripheral device 30B. When peripheral device 30B is deactivated, computer 28 sends to monitor board 70 a command that illuminates the indicator 74B "repair" LED. Peripheral device 30B can then be safely replaced. Computer 28 detects removal and replacement of peripheral device 30B by checking the state of the appropriate "device inserted" bit in monitor register 80. Following replacement, computer 28 commands power control register 78 to restore power to peripheral device 30B. Computer 28 also commands indicator control register 76 to extinguish the indicator 74B "repair" and "fail" LEDs. The above scenario describes one way in which defective peripheral devices 30 installed on SCSI bus 12 can be replaced without the necessity of powering down the entire computer system." A person of ordinary skill in the art at the time of the invention would have been motivated to no longer indicate a failed drive when it is not failing because the purpose of Daniels and Coulson is to point out a failed drive, and continuing to indicate a failed drive when it is

not failed, and has in fact been replaced with a functioning drive, would be highly counter-productive.

11. Claim 3, 9, 12, 18 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5305013 to Daniels in view of US6654816 to Zaudtke et al. and Taguchi as applied to claim 1, 7, 15 above, and further in view of US 5864659 to Kini.

12. Referring to claim 3, 9, 12, 18, Daniels in view of Z discloses said portable disk locator device comprises a connector adapted for mating with a connector of said removable disk array module, such that said portable disk location module is placed in electrical communication with said non-volatile memory device (From line 1 of column 7, "Each of the server computers 101-109 includes an I/O port that interfaces with the handheld device 123 to enable communication with each of the server computers 101-109. In some embodiments, the server computers 107 and 109 include serial ports 121 that couple via appropriate connectors to a serial cable 127 or the like. The serial ports 121 may be located anywhere on the server computers, such as the front bezel for convenient access by the administrator 126. In one embodiment, the serial cable 127 couples to a docking cradle 131 for receiving and docking the handheld device 123. The docking cradle 131 includes an appropriate connector 133 that interfaces a corresponding serial connector 127 of the handheld device 123 to enable communications when docked. In another embodiment, the serial cable 127 includes an appropriate connector 129 that is connected directly to the connector 125 of the handheld device 123 to enable communications.").

Further referring to claim 9, this connection is such that at least one indicator

device of said plurality of indicator devices disposed in the vicinity of each disk drive can receive electrical power (The electrical connection of Z enables the electrical indication of failure.).

Although Daniels in view of Z does not specifically disclose that the portable disk locator device is connected to the backplane, this is known in the art. An example of this is shown by Kini, from line 34 of column 4, "One advantage of providing the system management capabilities on an add-in board, instead of included as part of the motherboard circuitry, is that a purchaser of a computer server need not be required to buy such capabilities unless he needs the extra reliability, accessibility, serviceability, or other monitoring capability. This permits manufacturers to keep down the cost of the servers in a very price-sensitive market." A person of ordinary skill in the art at the time of the invention would have been motivated to make a locator "portable" because, as indicated in Kini, "This permits manufacturers to keep down the cost of the servers in a very price-sensitive market."

13. Claims 5, 14 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5305013 to Daniels in view of US6654816 to Zaudtke et al. and Taguchi as applied to claims 4, 7, 13, 16 above.

14. Referring to claim 5, 14, Daniels in view of Z discloses said power supply comprises a power supply (From line 55 of column 2, "The handheld device may be any type of portable device including a corresponding serial or infrared communication port, such as a palm PC (PPC) a personal digital assistant (PDA), a notebook computer, etc.").

Although Daniels in view of Z does not specifically disclose that the handheld device, in any of its forms must be powered by a battery, this is very well known in the art. An example of this is a battery. A person of ordinary skill in the art at the time of the invention would have been motivated to use a battery to power a handheld device because it allows it to be portable and not tethered to a power source such as a wall socket.

Response to Arguments

15. Applicant's arguments with respect to claims 1-7, 9-16, 18 have been considered but are moot in view of the new ground(s) of rejection.

16. Referring to Applicant's citation of page 4 lines 2-15 of Applicant's specification, this is largely not claimed.

17. Referring to Applicant's statement that Applicant does not understand Examiner's conclusory statement, the previous document regarding priority referred to by Examiner is now of record, and Applicant's position is also of record.

18. Referring to Applicant's argument that Zaudtke cannot supply energy via infrared, this is true, although, as cited above, Zaudtke also discloses that communication is accomplished via serial port. In view of Taguchi, one having ordinary skill in the art would have found it obvious to both communicate and supply power via USB port. See above rejection.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See notice of references cited.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel L. Chu whose telephone number is (571) 272-3656. The examiner can normally be reached on weekdays between 8:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Gabriel L. Chu
Primary Examiner
Art Unit 2114

gc